

What is Claimed is:

1. An optical information storing device, comprising:

a data recording section that receives arbitrary recording data and records the recording data in a predetermined information storage medium in the form of optically-readable marks;

a cyclic data output section that outputs predetermined cyclic data in which values are repeated every N bytes (N being an integer larger than 3, except for multiples of 3); and

a logic operation section that receives the cyclic data output from the cyclic data output section and arbitrary original data, performs a predetermined logic operation on the cyclic data and the original data and inputs data resulting from the logic operation to the data recording section as the recording data.

2. The optical information storing device according to claim 1, wherein the logic operation section uses the exclusive-OR as the logic operation.

3. An optical information storing device, comprising:

a data reading section that reads data recorded in a predetermined information storage medium in the form of optically-readable marks;

a cyclic data output section that outputs predetermined cyclic data in which values are repeated every N bytes (N being an integer larger than 3, except for multiples of 3); and

an inverse operation section that performs an inverse operation of a predetermined logic operation on the data read by the data reading section and the cyclic data output from the cyclic data output section and outputs data resulting from the inverse operation.

4. The optical information storing device according to claim 3, wherein the inverse operation section uses the exclusive-OR as the inverse operation.

5. The optical information storing device according to claim 1 or 3, wherein the cyclic data output section outputs predetermined cyclic data in which values are repeated every 5 bytes.

6. The optical information storing device according to claim 1 or 3, wherein the cyclic data output section has a register that stores N bytes of data which are a unit of the cyclic data and a cyclic data generator that generates the cyclic data repeatedly using the N bytes of data stored in the register.

7. The optical information storing device according to claim 1 or 3, wherein the predetermined information storage medium is a medium having plural tracks in which the marks are to be recorded arranged in parallel with each other, and

the cyclic data output section outputs different cyclic data for each track.

8. The optical information storing device according to claim 1 or 3, wherein the predetermined information storage medium is a medium having plural tracks in which the marks are to be recorded arranged in parallel with each other, the tracks being each divided into plural sectors, and

the cyclic data output section outputs different cyclic data for each sector.

9. The optical information storing device according to claim 1 or 3, wherein the predetermined information storage medium is a medium having plural tracks in which the marks are to be recorded arranged in parallel with each other, the plural tracks being assigned respective track numbers for discriminating among the tracks, and

the cyclic data output section generates the cyclic data based on bit values of predetermined bits including a least significant bit in bit data representing the track number and outputs the cyclic data.

10. The optical information storing device according to claim 1 or 3, wherein the predetermined information storage medium is a medium having plural tracks in which the marks are to be recorded

arranged in parallel with each other, the plural tracks being each divided into plural sectors, the plural tracks being assigned respective track numbers for discriminating among the tracks, the plural sectors being assigned respective sector numbers for discriminating among the sectors, and

the cyclic data output section generates the cyclic data based on bit values of predetermined bits including a least significant bit in bit data representing the track number and bit values of predetermined bits including a least significant bit in bit data representing the sector number and outputs the cyclic data.

11. The optical information storing device according to claim 1, further comprising: a nullifying section that nullifies the logic operation by the logic operation section when performing a read/write test of the marks for the predetermined information storage medium.

12. The optical information storing device according to claim 3, further comprising: a nullifying section that nullifies the inverse operation by the inverse operation section when performing a read/write test of the marks for the predetermined information storage medium.

13. The optical information storing device according to claim 1, further comprising: a nullifying section that nullifies the logic operation by the logic operation section when performing a failure check for the predetermined information storage medium.

14. The optical information storing device according to claim 3, further comprising: a nullifying section that nullifies the inverse operation by the inverse operation section when performing a failure check for the predetermined information storage medium.

15. The optical information storing device according to claim 1 or 3, wherein the predetermined information storage medium has a security area in which security information is recorded and an ordinary area in which ordinary information excluding the security information is recorded, and

the cyclic data output section outputs different cyclic data for the security area and the ordinary area.

16. The optical information storing device according to claim 1 or 3, wherein the cyclic data output section generates the cyclic data based on a data value of a predetermined bit in security bit data and outputs the cyclic data.

17. A data processing circuit that is incorporated in an optical information storing device and performs data processing, the

optical information storing device having a data recording section that receives arbitrary recording data and records the recording data in a predetermined information storage medium in the form of optically-readable marks, the data processing circuit comprising:

- a cyclic data output section that outputs predetermined cyclic data in which values are repeated every N bytes (N being an integer larger than 3, except for multiples of 3); and

- a logic operation section that receives the cyclic data output from the cyclic data output section and arbitrary original data, performs a predetermined logic operation on the cyclic data and the original data and inputs data resulting from the logic operation to the data recording section as the recording data.

18. A data processing circuit that is incorporated in an optical information storing device and performs data processing, the optical information storing device having a data reading section that reads data recorded in a predetermined information storage medium in the form of optically-readable marks, the data processing circuit comprising:

- a cyclic data output section that outputs predetermined cyclic data in which values are repeated every N bytes (N being an integer larger than 3, except for multiples of 3); and

- an inverse operation section that performs an inverse operation of a predetermined logic operation on the data read by

the data reading section and the cyclic data output from the cyclic data output section and outputs data resulting from the inverse operation.

19. An information storage medium in which information is recorded therein in the form of optically-readable marks, wherein data resulting from a predetermined logic operation performed on digital data representing the information and predetermined cyclic data in which values are repeated every N bytes (N being an integer larger than 3, except for multiples of 3) is converted into a mark and recorded.